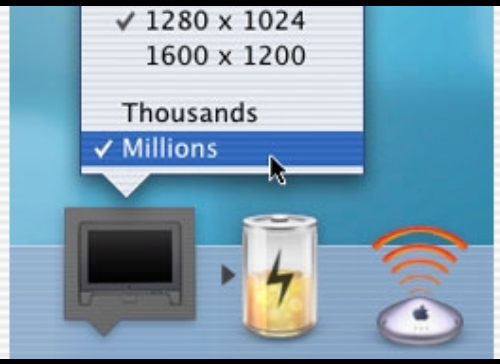
Session 603

Introduction to WebObjects Tools



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What You'll Learn

- What are the tools used to build WebObjects Applications
- How to build a basic application
- How to customize a Direct to Web application using the tools
- New things in WebObjects 5

WebObjects Tools

- Project Builder
- Direct to Web Assistant
- WebObjects Builder
- EOModeler
- Direct to Java Client Assistant

Project Builder Introduction

- Start a new Project
- Examine the Resources
- Compile a Project
- Set Runtime Parameters
- Launch an Application

Direct to Web Introduction

- Launch the Direct to Web Assistant
- Customize Tasks and Entities
- Save and Update changes on the fly

WebObjects Builder Introduction

- Edit the Components in our Project
- Show path view for HTML selection and manipulation
- Show binding validation
- Show the Help System

EOModeler Introduction

- Explain the importance of an EOModel
- Discuss the features of EOModeler

Direct to Java Client Introduction

- Build and Launch a Direct to Java Client Application
- Run the Direct to Java Client Assistant

WebObjects Tools at Other Sessions

- Project Builder
  - Introduction to Project Builder (701)
  - Project Builder In Depth (703)
  - Debugging on Mac OS X (706)
- Direct to Web
  - Direct to Web (612)
- WebObjects Builder
  - Getting the Most out of WebObjects Tools (616)

WebObjects Tools at Other Sessions (Cont.)

- EOModeler
  - Introduction to EOF (603)
  - Introduction to Data Modeling (610)
  - Advanced EOF (614)
- Direct to Java Client and Java Client
  - Direct to Java Client (606)
  - Advanced Java Client (614)

A Common Web App

- Query and list information on Courses, Grades and Students
- Replace a Wizard App with a more reusable alternative

Getting Started—Project Builder

- The IDE for WebObjects 5 applications
- Manage resources
  - Static and Dynamic HTML (WebObjects Builder)
  - Database mapping (EOModeler)
- Edit and debug code
- Build applications, frameworks, or custom projects
- Launch and debug application

Selecting the Project—Direct to Web

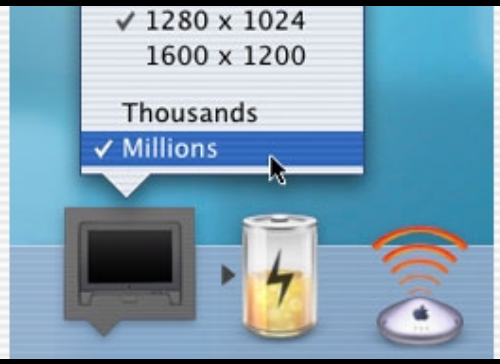
- Includes all the necessary frameworks and resources to complete the app
- Use a model to set up database access
- Starts with a default login page and provides dynamic pages for all tables to query, list, insert and edit
- Web Assistant to customize pages

Getting Started With Direct to Web (Cont.)

- Often used to validate database model or admin application
- Contains a UI Model and a DB Model to give great default behavior that is fully customizable
- Greater flexibility than a wizard

Demo

Project Builder and Direct to Web



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Customizing the HTML User Interface

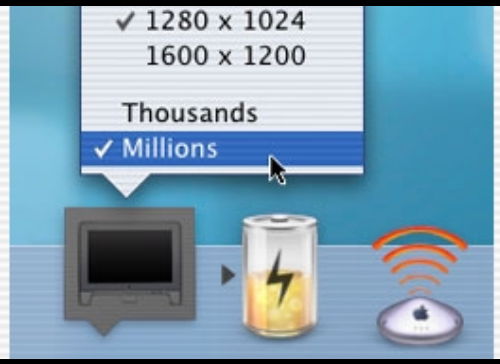
- Use WebObjects Builder to modify
  - Main Page
  - Tasks Page (List, Query, Edit, etc…)
  - Frozen Pages
  - Page Wrapper and MenuHeader

WebObjects Builder

- Edit HTML
- Bind HTML to Objects in your Project
- Integration with EOModeler to bind HTML to persistent data
- Integration with Project Bulder for code synchronization

Demo

WebObjects Builder



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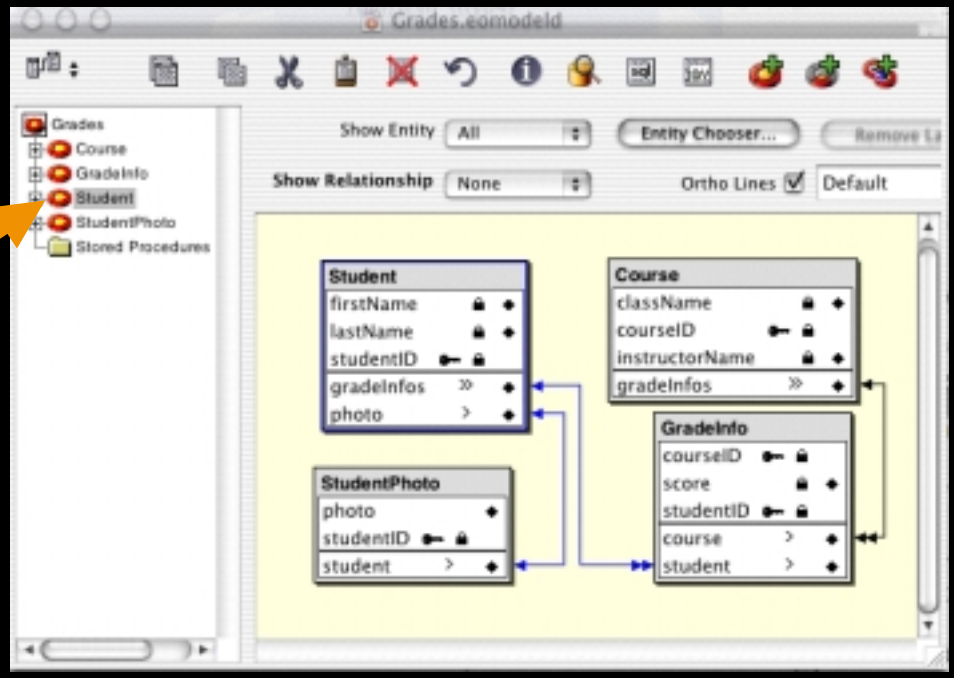
EOModeler Manages an EOModel

- Provides persistent data store connectivity
- Maps data into objects
- Defines relationships

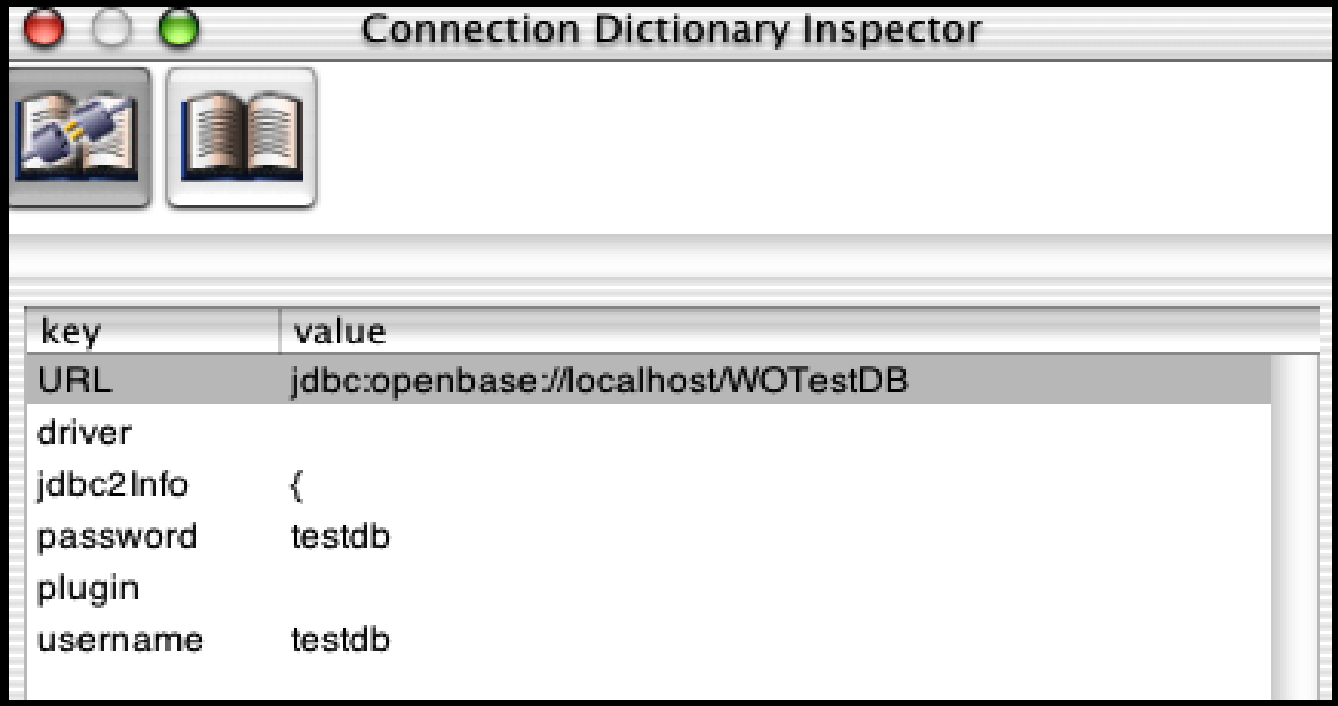
Enterprise Objects (EOs) are Java objects which represent records in a data store



Provides Persistent Data Store Connectivity

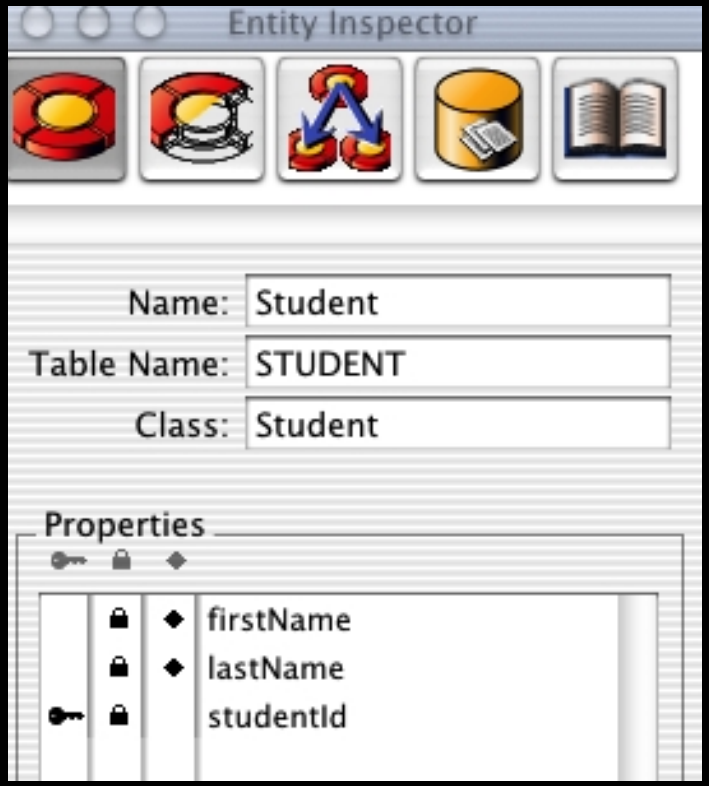
- Each EOModel in a WebObjects app connects to a specific data source
  - Oracle, Sybase, OpenBase, 3270 screen scraping, etc. (usually a RDBMS via JDBC)
- Maps native data types into Java types
  - Varchar becomes java.lang.String
  - int becomes java.lang.Number

Provides Persistent Data Store Connectivity



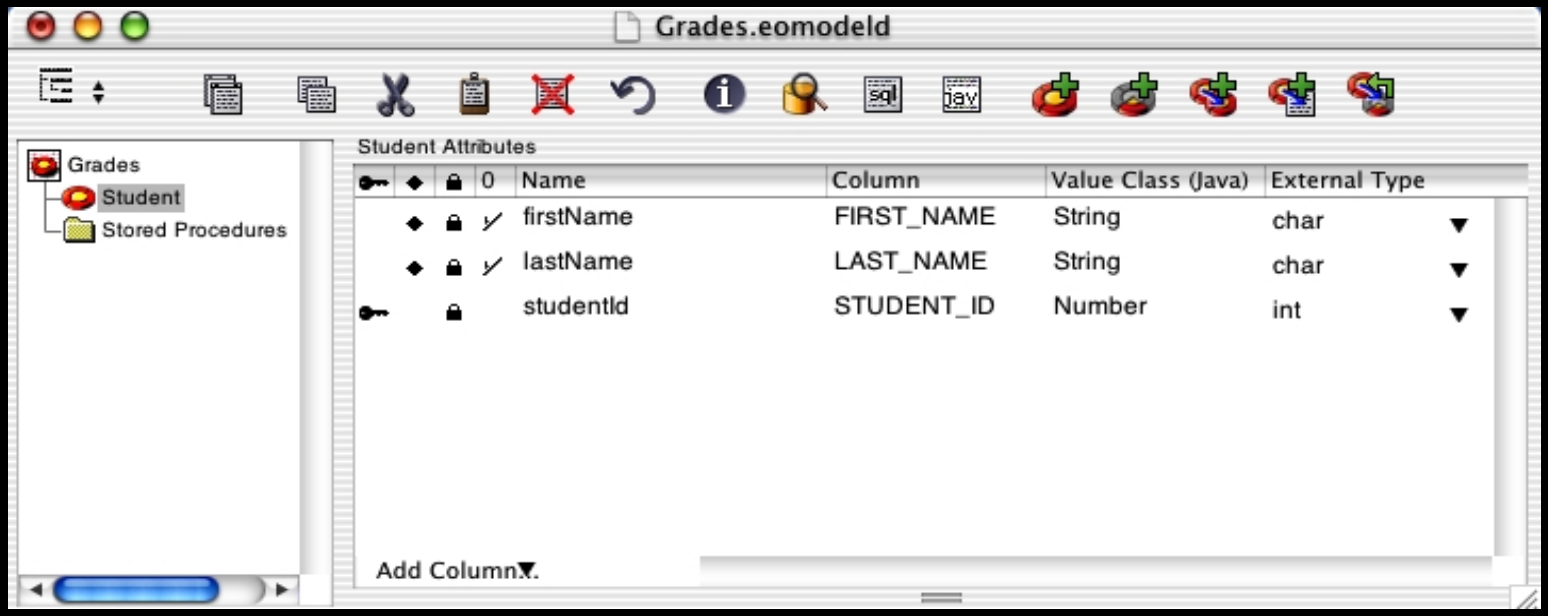
Maps Data Into Objects

- There is usually a 1:1 mapping
  - Between tables and classes



Maps Data Into Objects

- There is usually a 1:1 mapping
  - Between columns and EO attributes



Maps Data Into Objects

- Creates templates for custom business logic

```
public class Student extends EOGenericRecord {
    public String firstName() {
        return (String)storedValueForKey("firstName");
    }

    public void setFirstName(String value) {
        takeStoredValueForKey(value, "firstName");
    }  ...
```

```
public String fullName() {
    return firstName() + " " + lastName();
}
```

Defines Relationships

- To 1

```
public Photo toPhoto() {
        return (Photo)valueForKey("toPhoto");
}
```

- To Many

```
public NSArray toPhotos() {
        return (NSArray)valueForKey("toPhotos");
}
```

- Many : Many
  - Can hide intermediate entity

Defines Relationship Rules

- Delete rules
  - Cascade
  - Deny
  - Nullify
  - No Action
- Propagate primary key (1:1 relationship)
- Owns destination

EOModeler

- Reverse engineers database schema into an EOModel
- Generates SQL to create or sync database schema
- Graphically creates fetch specifications
- Allows importing and exporting of data
- Browses live data

EO Middleware

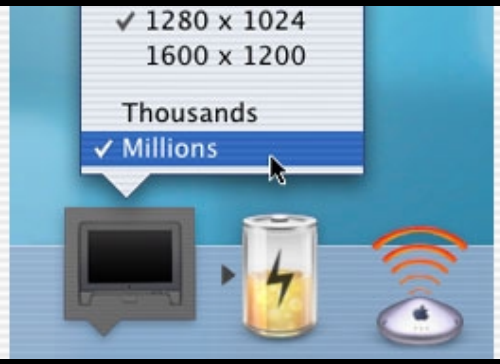
- The EOModel is the tip of the iceberg
  - EOModeler works with EOF to keep EOs in memory synchronized with the database and vice versa

```
students =
EOUtilities.objectsMatchingKeyAndValue(editingContext,
"Student", "lastName", "Smith");

((Student)students.objectAtIndex(0)).setLastName ("Jones");

editingContext.saveChanges();
```

EOModeler provides
a layer of abstraction that
minimizes the cost
of change

Demo

EOModeler



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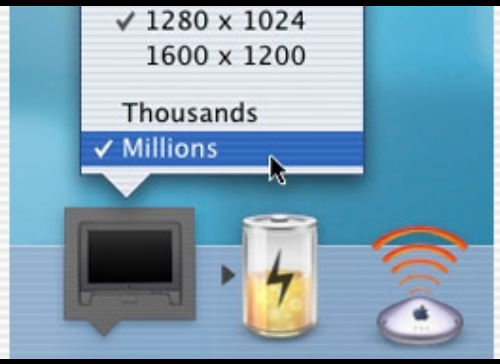
Direct to Java Client

- Similar to Direct to Web, but Java Swing UI instead of HTML
- Very rapid development of richer web apps
- Easiest to deploy on Mac OS X
  - Be aware of deployment issues on other platforms

Demo

Direct to Java Client



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WebObjects Lab

- Located downstairs in Room K
- Lab hours
  - Monday 12:00pm–6:00pm
  - Tuesday 10:30am–6:00pm
  - Wednesday 10:30am–6:00pm
  - Thursday 10:30am–6:00pm
  - Friday 10:30am–3:30pm

Vote for WebObjects as Best App Server

http://developer.apple.com/webobjects

Roadmap

604 Introduction to Enterprise Object Framework	Civic **Tues., 5:00pm**
703 Project Builder In-Depth	Room A2 **Wed., 9:00am**
606 Direct to Java Client	Room A1 **Wed., 3:30pm**
612 Direct to Web	Room A1 **Thurs., 2:00pm**
616 Getting the Most Out of WebObjects Tools	Room A1 **Fri., 9:30am**

Who to Contact

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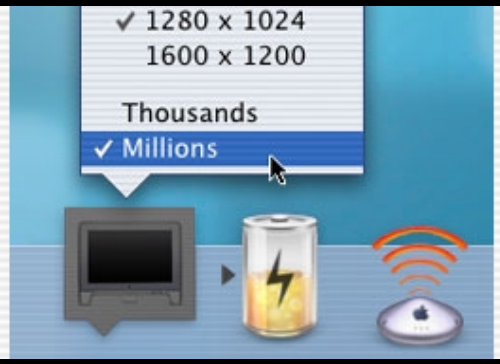
Q&A



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WWDC

Worldwide Developers Conference 2001